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From

Beane

REFERENCE,

PAPER READ BEFORE THE ELECTRIC CLUB OF NEW YORK,

JANUARY 6, 1887,

3.25.87.

BY

JOHN W. BEANE,

OF NEW YORK.

SUBJECT:

“THE INSTALLATION  
OF  
ELECTRIC LIGHT PLANTS.”

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THE INSTALLATION

— OF —

ELECTRIC LIGHT PLANTS.

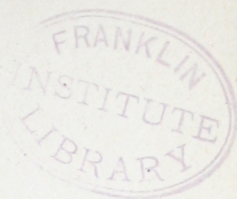
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It has been announced that I am to read to-night a reply to the paper presented by Dr. Benjamin at the last meeting on the subject of the Rules governing the Installation of Electric Plants. I was not here at the meeting, but read the rules as published in the "*Electrical Review*," in a recent number. I feel that the thanks of the Club are fully due the doctor for bringing before it so interesting a subject—one which cannot be too frequently discussed in the proper spirit—unbiased by interested motives—prompted by a sincere desire to still further increase the safety of Electric lighting.

I have not examined these rules as carefully as I could wish, owing to lack of time, but they appear to me, in effect, those which are pretty generally in use in this country at present.

Referring to Rule II, at first thought it would seem better to limit the size of conductor by a certain excess of temperature above the air in which it is placed, say 50° F., for the difference in temperature of a wire in winter and summer must make a difference in its carrying capacity, and I think this a proper subject for discussion. There is another matter which is well worth considering seriously, and that is whether it is not safer, at least in cases where low potential currents are used, to place the positive and negative leads close together,





separated by a *thin* septum of some material of high insulation resistance, than the present method of using Underwriters' wire, and a half inch septum of wood.

In regard to the inspection of electric light plants, as is well known, there is lack of uniformity in the requirements of the different Boards of Fire Underwriters throughout the country; and as to their enforcement, in many cases it would seem as if no inspection was made at all, or at least in a very perfunctory manner. I regard the proper inspection of installations as of much value to the Electric Light Companies, and believe that no plant, no matter where located, nor how small, should escape.

This matter of *uniformity* in the rules of the Boards of Fire Underwriters and, what is more important, their impartial, rigid enforcement, is one which should claim the attention, and calls for the united action of the electric light and power companies.

I refer here simply to the necessity of *more uniformity* in the rules enforced in different parts of the country, and do not wish to be understood as endorsing any of the wild statements I have seen published in some of the daily journals recently, setting forth the terrible havoc of the electric light both as to property and life.

It is hardly worth while to treat these assertions seriously—the time has gone by when it would be necessary to do so—to set the matter in its proper light before the public.

As to the dangers from fire, I have only a word or two to say—the losses from fire in this vicinity during the past five years have amounted to a value of twenty-five millions of dollars (\$25,000,000); during the same period, and in the same territory, the losses due to electric light have reached the *enormous* (?) value of four thousand dollars (\$4,000), and there are more electric lights here than in any territory of equal size in the country.

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To show you how exclusive a lien the authors of these statements referred to have upon this made-to-order-fire-fiend of the Electric Light I will call your attention to the fact, which is well known to you all, that fire insurance companies in New England and in and around New York make a reduction, in a large number of risks, in the rates of insurance where the electric light is installed instead of other illuminants.

As to the terrible loss of life, the entire number of deaths from high tension electric light currents since lighting by electricity has become a commercial occupation, can be counted on the fingers of the hands. Let us consider other illuminants, oil, or gas—the merest tyro cannot fail to see the absurdity of the comparison as in favor of the electric light. Let us bring the matter right home to New York and we find that the Coroners' reports, for four or five years past, record deaths due to gas (excluding suicides) numbering at least twenty (20) per annum.

If we consider the fatalities among engineers, machinists, carpenters, painters, masons, etc., the comparison becomes most marked in favor of the electrical engineer. It is not my desire to belittle the dangers of high tension currents, but I must protest against their exaggeration. With the safeguards that are now employed in their manipulation, the possibility of fatal shocks are indeed few, but as to making the occupation of electrical engineer an *absolutely* safe one, we might as well attempt to make existence absolutely safe from fatal accident. The old saw-mill admonition in relation to undue familiarity with the buz-saw whilst in motion applies, in principle, equally well in the central electric light station.